

Title (en)
MATERIAL SYSTEMS AND METHODS OF MANUFACTURING MATERIAL SYSTEMS

Title (de)
MATERIALSYSTEME UND VERFAHREN ZUR HERSTELLUNG VON MATERIALSYSTEMEN

Title (fr)
SYSTÈMES DE MATÉRIAUX ET PROCÉDÉS DE FABRICATION DE SYSTÈMES DE MATÉRIAUX

Publication
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Application
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Priority
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Abstract (en)
A material system may include: an aluminum layer; a glass composite layer adjacent to the first aluminum layer; and a carbon composite layer adjacent to the first glass composite layer, and opposite to the first aluminum layer. A method of manufacturing a material system may include: stacking an aluminum layer, glass composite layer that may include thermoplastic prepreg plies, and carbon composite layer so that the aluminum layer is adjacent to the glass composite layer, and the glass composite layer is adjacent to the carbon composite layer; and consolidating the thermoplastic prepreg plies to soften the aluminum layer. A method of manufacturing a material system may include: stacking an aluminum layer, glass composite layer that comprises thermoplastic resin, and carbon composite layer so that the glass composite layer is between the aluminum and carbon composite layers; and adjusting temperature and pressure to consolidate the stack.

IPC 8 full level
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Citation (search report)
• [X] US 2011052910 A1 20110303 - GUNNINK JAN WILLEM [NL], et al
• [X] US 2013316148 A1 20131128 - GUNNINK JAN WILLEM [NL]
• [X] US 2013196121 A1 20130801 - BEUMLER THOMAS [DE]

Cited by
EP3957687A4; EP3900921A4; US11938688B2

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